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## ENZYMATIC SYNTHESIS OF OLIGONUCLEOTIDE TAGS

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### Abstract of the Invention

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The invention provides oligonucleotide tag compositions and methods for synthesizing repertoires of error-free oligonucleotide tags that may be used for labeling and sorting polynucleotides, such as cDNAs, restriction fragments, and the like. In accordance with the method of the invention, oligonucleotide tag precursors are provided in an amplicon, wherein the tag precursors each consists of one or more oligonucleotide "words" selected from the same minimally cross-hybridizing set of words. The oligonucleotide tag precursors are elongated by repeated cycles of cleavage, ligation of one or more words, and amplification. Cycles continue until the oligonucleotide tags of the repertoire have a desired length or complexity.